ATTACHMENT A, ANNEX 25
RADIOLOGICAL HAZARDS

I. INTRODUCTION

A. Information in this attachment excludes emergency planning efforts required by SC Code of Regulations 61-63 (Supp. 1996) for individual licensees who possess radioactive material.

B. Radiological hazards in South Carolina include commercial nuclear power plants; the U.S. Department of Energy (DOE), Savannah River Site (SRS) - Aiken; DOE transportation of foreign and domestic research reactor spent nuclear fuel (SNF) and transauranic (TRU) waste, Westinghouse Nuclear Fuel Production Plant - Columbia, the U.S. Navy Nuclear Power Training Unit (NPTU) - Goose Creek, and the Chem-Nuclear low-level waste burial site - Barnwell.

C. There are four commercial nuclear power plants in South Carolina: the Oconee Nuclear Site located in Oconee County and operated by Duke Energy Corporation; the Catawba Nuclear Station located in York County and operated by Duke Energy Corporation; the V. C. Summer Nuclear Station located in Fairfield County and operated by South Carolina Electric and Gas Company; and the H. B. Robinson Steam Electric Plant located in Darlington County and operated by Progress Energy Carolinas.

D. Commercial nuclear power plants in neighboring states that have an impact on South Carolina are the Vogtle Electric Generating Plant located adjacent to SRS in Waynesboro County, Georgia and operated by Georgia Power Company; the McGuire Nuclear Station located in Mecklenburg County, North Carolina and operated by Duke Energy Corporation; and the Brunswick Nuclear Station located in Brunswick County, North Carolina and operated by Progress Energy Carolinas.

E. Thirteen South Carolina counties considered risk counties are located within the 10-mile plume Emergency Planning Zone of these nuclear power plants. In the event of an emergency, residents of these counties may be required to take protective actions to avoid unnecessary exposure to radiological materials. Seven South Carolina counties serve as host counties for evacuees from risk counties.

F. Forty-one (41) South Carolina counties are located within the Ingestion Pathway Zone (a fifty (50) mile Emergency Planning Zone) of the above facilities. Should there be an accident with subsequent release of radioactive materials at any of these facilities, protective measures for the food and water supply will be necessary.

G. The probability of a nuclear incident or accident occurring at these facilities that would involve the release of radioactive materials on or offsite is low. However, the possibility does exist that an incident could occur that would result in rapid action needed to protect the public from exposure to radiological materials.

H. The DOE Savannah River Site (SRS) constitutes another major fixed nuclear facility (FNF) with potential impact on South Carolina residents. The function and mission of SRS has changed over the years from refining tritium and plutonium products for national defense, producing other special nuclear materials, and performing environmental restoration to serving the nation through safe, secure, cost-effective management of nuclear weapons stockpile and nuclear materials.

I. The transportation of both foreign and domestic spent nuclear fuel (SNF) and other radiological materials to and from SRS constitutes another radiological hazard in South Carolina that may impact state residents. In September 1996, DOE began a prolonged campaign to ship approximately 19 metric tons of highly enriched uranium foreign research reactor (FRR) SNF to SRS. FRR SNF shipments will continue at the approximate rate of one every six to eight weeks until the entire stockpile is returned to United States control.

J. During shipment, Foreign Spent Nuclear Fuel (FSNF) is contained in specially designed stainless steel casks, certified by the Nuclear Regulatory Commission (NRC) to provide protection and containment of contents. Moreover, the spent fuel itself consists mostly of solid metallic materials that are not readily dispersed. Therefore, large releases of radioactivity are not likely to occur even in the severest of accident conditions. While the probability of an accident involving a SNF shipment is extremely low, there is still the possibility of such an event, which would require the response of local, state, and federal radiological response agencies.

K. In March 2000, DOE-SRS began shipping transuranic waste (TRU) to the Waste Isolation Pilot Project (WIPP) in Carlsbad, New Mexico. Like SNF, TRU waste is also shipped in specially designed containers called TRUPACS, which lessen the probability that a radioactive release might occur during a transportation incident.

L. Spent Nuclear Fuel (SNF) from all South Carolina commercial nuclear power plants is stored onsite in specially designed facilities.

M. The disposal of low-level radioactive waste at the Barnwell Low-Level Radioactive Waste Disposal Facility, operated by Chem-Nuclear Systems in Barnwell County is also classified as a potential radiological hazard in

South Carolina. The Barnwell Disposal Facility accepts only radioactive waste that has been processed for disposal. The Barnwell Disposal Facility uses shallow land disposal to dispose of waste. The threat to the public from a release of radioactive material is remote, but there is a potential impact to the environment in the event of leakage through protection barriers.

N. Another potential radiological hazard is the Westinghouse Fuel Plant in Columbia, South Carolina. The Westinghouse Fuel Plant fabricates nuclear fuel assemblies containing low-level enriched uranium oxide fuel for use in commercial light-water nuclear-powered reactors. Although an offsite release of radiological material is remote, there is a possibility of a release of radioactive and chemical materials, which could impact factory workers, and the environment.

O. The Nuclear Power Training Unit (NPTU) at the Naval Weapons Station in Goose Creek, South Carolina is also identified as a radiological hazard. There are two reactors used for training Navy operators for shipboard nuclear reactor operations. A radiological incident involving the release of radiological materials at NPTU would be contained onsite, with minimal offsite impacts.

II. MISSION

To provide technical information and guidance concerning potential radiological hazards in South Carolina to state officials and agencies who have responsibilities for emergency preparedness planning, training, coordination, notification, hazard assessment, and technical support.

III. CONCEPT OF OPERATIONS

A. Under the direction of the Governor, the total and combined efforts of the state, especially the SC Emergency Management Division (SCEMD) and the SC Department of Health and Environmental Control (DHEC), and local governments will be utilized to mitigate the effects of radiological hazards resulting from an accident. All radiological response organizations will be prepared to react on a 24-hour basis, and will be capable of continuous operation for a protracted period. Directors of state agencies, departments, and commissions are responsible for ensuring that their agencies' radiological emergency responsibilities are accomplished. Designated county officials are responsible for emergency response within their jurisdictions.

B. SCEMD is the lead agency for coordinating with appropriate departments, agencies, and organizations in emergency response involving radiological hazards previously discussed in the event of a declared state of emergency.

The plans and procedures that deal with emergency response activities for radiological incidents are addressed in the following publications: South Carolina Operational Radiological Emergency Response Plan (SCORERP) which is Appendix 2 to the South Carolina Emergency Operations Plan, South Carolina Technical Radiological Emergency Response Plan (SCTRERP), Spent Nuclear Fuel Emergency Action Plan (SNF EAP), Charleston Naval Station Memorandum of Understanding (CNS MOU), and the Westinghouse Commercial Nuclear Fuel Division Emergency Response Plan.

C. SC DHEC is the state point of contact for DOE advance notification of SNF shipments to and through South Carolina. SCEMD is the state-coordinating agency for SNF advance notification to counties and emergency notification should there be an incident. SCEMD will coordinate all actions recommended by SC DHEC to protect the health and safety of the citizens of South Carolina. SC DHEC is the lead agency for responding to all transportation incidents involving radiological materials and recommending appropriate actions to protect the health and safety of the citizens of South Carolina. SC DHEC is responsible for providing health physics shadow teams for all foreign and domestic SNF shipments. Local government emergency response agencies, i.e., fire, police, and medical will provide initial response to radiological transportation incidents and are responsible for establishing the Incident Command Post at the scene.

IV. RESPONSIBILITIES

A. SC Emergency Management Division

1. Coordinate SNF advance notification and emergency notification to counties.

2. Coordinate radiological hazard emergency response actions recommended by SC DHEC.

B. Department of Health and Environmental Control

1. Coordinate DOE radiological shipments to, from, and through South Carolina.

2. Respond to all transportation incidents involving radiological materials.

3. Recommend appropriate actions to protect the health and safety of the citizens of South Carolina.

4. Providing health physics shadow teams for all foreign and domestic SNF shipments.

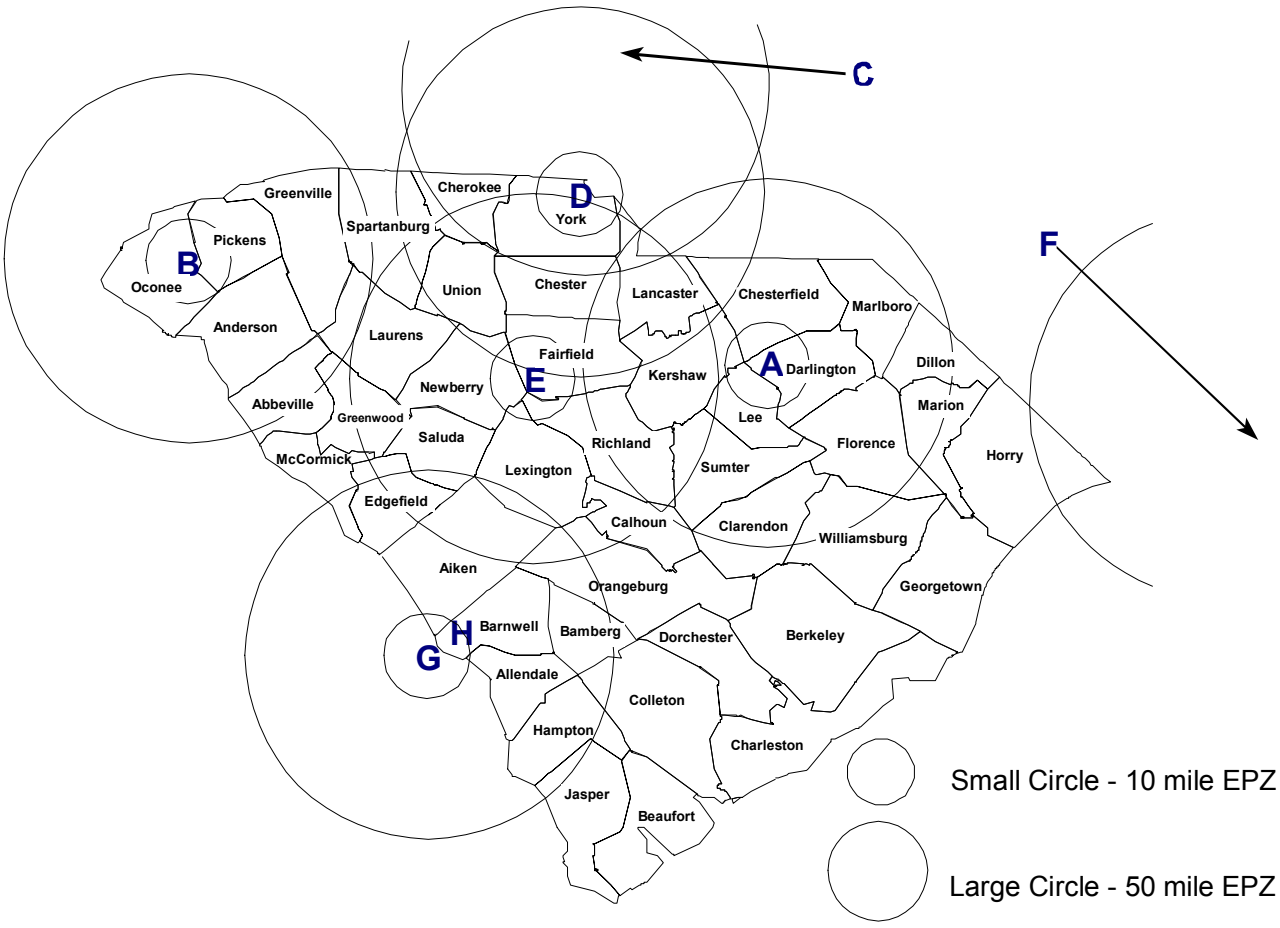
V. FEDERAL INTERFACE

A. The principal federal agencies that provide assistance in the event of a radiological disaster or emergency are: the Federal Emergency Management Agency (FEMA), the Nuclear Regulatory Commission (NRC), the Environmental Protection Agency (EPA) and the Department of Energy (DOE). Other federal agencies that have collateral or coordinating responsibilities are identified in the National Response Plan (NRP).

B. As provided in the Stafford Act, the federal government is authorized to respond to disasters and emergencies in order to provide assistance to save lives and protect public health, safety, and property. To facilitate the provision of federal assistance, the Federal Radiological Emergency Response Plan uses a functional approach to group the types of federal assistance, which a state is most likely to need under fifteen Emergency Support Functions (ESFs).

TAB 1 TO ATTACHMENT A, ANNEX 25

South Carolina Nuclear Facilities Emergency Planning Zones



NUCLEAR FACILITIES

A. H.B. Robinson
B. Oconee
C. McGuire (NC)
D. Catawba
E. V.C. Summer
F. Brunswick (NC)
G. Vogtle (GA)
H. Savannah River Site (DOE)